UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,556	10/23/2001	Martin Klein	H 2182	4171

1218 7590 06/02/2009

CASELLA & HESPOS
274 MADISON AVENUE
NEW YORK, NY 10016

EXAMINER
LEE, SHUN K

ART UNIT	PAPER NUMBER
2884	

MAIL DATE	DELIVERY MODE
06/02/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARTIN KLEIN and CHRISTIAN SCHMIDT

Appeal 2009-001266
Application 10/047,556
Technology Center 2800

Decided:[1] June 1, 2009

Before ROBERT E. NAPPI, JOHN A. JEFFERY, and
CARLA M. KRIVAK, *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1-3, 5, 6, 8-10, 13-15, 17, and 18. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

---

[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF CASE

Appellants' claimed invention is a detector for detecting electrically neutral particles (Spec. ¶[0001]). A converter generates conversion products that generate electrically charged particles in a counting gas. A readout device detects the electrically charged particles. An electrical drift field is then generated so that some of the electrically charged particles drift toward the readout device. (Abstract; Spec. ¶[0008])

Independent claim 1, reproduced below, is representative of the subject matter on appeal.

> 1. A detector for detecting electrically neutral particles comprising:
>
> a detector housing which at least in certain regions is filled with a counting gas,
>
> a multiplicity of converter devices arranged in cascade form in the detector housing for generating conversion products as a result of the absorption of the neutral particles which are to be detected, the conversion products generating electrically charged particles in the counting gas, each of said converter devices comprising an insulator layer having opposite first and second surfaces, a first conductive layer and second conductive layer disposed respectively on the first and second surfaces of the insulator layer such that the first and second conductive layers are electrically insulated from one another by the insulator layer, and at least one converter layer arranged on at least one of the first conductive layer and the second conductive layer to define an outermost part of each said converter device, the converter layer being formed of a material different than the conductive layer on which the converter layer is arranged,
>
> at least one readout device for detecting the electrically charged particles,

> at least one electrical drift field device for generating an electrical drift field for the electrically charged particles in at least a region of the volume of the counting gas in such a manner that at least some of the electrically charged particles drift toward the readout device, the converter device being a charge-transparent design and being arranged in the detector housing in such a manner that the drift field passes through at least part of each said converter device.

REFERENCES

Gleason	US 3,956,654	May 11, 1976
Sauli	US 6,011,265	Jan. 4, 2000
Danielsson	US 6,429,578 B1	Aug. 6, 2002 (filed Jan. 26, 1999)

The Examiner rejected claims 1, 2, 5, 6, 8-10, 13-15, 17, and 18 under 35 U.S.C. § 103(a) based upon the teachings of Danielsson and Gleason.

The Examiner rejected claim 3 under 35 U.S.C. § 103(a) based upon the teachings of Danielsson, Gleason, and Sauli.

Appellants contend that Danielsson does not allow a choice of converter material as does Appellants invention, chosen in view of a specific purpose of a converter device, because Danielsson is limited to an electrode being used simultaneously as a converter (App. Br. 6).[2] Appellants also contend that the "converter layer formed from the material different from the conductive layer on which the converter layer is arranged" produces much greater absorption efficiency than Danielsson (App. Br. 6). Finally, Appellants contend that none of the cited art suggests modifying Danielsson to include an additional converter layer on the GEM foil as taught by Gleason (App. Br. 8).

[2] The Appeal Brief in the Response to Notification of Non-Compliant Appeal Brief, filed on July 12, 2007, is referred to throughout this opinion.

ISSUE

Did Appellants establish that the Examiner erred in combining Danielsson and Gleason to obtain Appellants' claimed invention?

FINDINGS OF FACT

1. The converter devices 22 of Appellants detector are layered structures that include a gas electron multiplier layer (GEM). The GEM includes an insulator layer 26 of, for example, Kapton. Conductive layers 28, 30 are formed respectively on either side of the insulator layer. The conductive layers can be formed of copper. A solid converter layer 24 of, for example, boron-10 is coated on the conductive layers. (Spec. ¶[0040]; Figs. 1, 2a, 3)

2. The solid converter layer is an absorption layer (e.g., Spec. ¶¶[0047], [0059]).

3. Danielsson teaches detection means that includes a converter (Figs. 1a-1c). The converter includes a GEM 200, shown in Figure 2a, made of a thin composite mesh 202. The mesh includes a thin insulating film 204 formed of, for example, Kapton. The insulating foil is metal clad on both sides, the metal being copper. The structure is located in a confinement containing a gas. (Col. 6, ll. 27-33)

4. Figures 7a and 7b of Danielsson show a composite amplifier/converter structure that includes a metal layer 704 deposited on an insulating layer 706 similar to that in Figure 2a. Underneath the insulating layer is a thick metal layer 708. Below the thick metal layer is a second insulating layer on which there is deposited a second metal layer 712. (Col. 10, l. 65-col. 11, l. 17)

5. Gleason teaches a detector in which a neutron absorption layer 18 (converter layer) is boron-10 (col. 1, ll. 21-22; Fig. 1).

6. Gleason also teaches a thin insulating film 22 disposed over the neutron absorptive film (col. 3, ll. 12-13), which is disposed on the interior surface 20 of an enclosure member 12 (col. 3, ll. 3-4).

7. Sauli teaches a GEM structure having diameters of 110 μm and 130 μm and a minimum spacing of 140 μm to 200 μm (col. 9, ll. 32-52; Tables I and III).

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). "[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If the Examiner's burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *Id.*

ANALYSIS

Claims 1, 2, 5, 6, 8-10, 13-15, 17, and 18

The Examiner rejected claims 1, 2, 5, 6, 8-10, 13-15, 17, and 18 as obvious over Danielsson and Gleason under 35 U.S.C. § 103. The Examiner

finds that Danielsson teaches all of Appellants' claim limitations except for an explicit description that at least one converter layer is arranged on at least one of the first and second conductive layers to define an outermost part of each conductive device (Ans. 3-4). Appellants broadly address this rejection (App. Br. 5-9). Because claim 1 includes all the features of independent claims 13 and 14, and is the broadest claim, this rejection is addressed with respect to representative claim 1.

Appellants contend that the claimed converter layer is formed from a material different than the conductive layer on which it is arranged. This provides a significant advantage over Danielsson in that it allows a converter material to be chosen in view of the specific purpose of the converter device irrespective of the electrode material of the GEM foil (App. Br. 6). Appellants assert that Danielsson does not allow such a choice because the electrode in Danielsson is always limited to being used simultaneously as a converter (App. Br. 6). Additionally, the converter layer, formed from a material different than the conductive layer, produces greater absorption efficiency (App. Br. 6).

Appellants rely on a Rule 132 Declaration[3] that includes a graph to demonstrate the greater absorption efficiency of Appellants invention (App. Br. 6-7). However, as found by the Examiner, the Rule 132 Declaration does not establish that the differences in results are in fact unexpected, unobvious, and of both statistical and practical significance (Ans. 9). Further, the findings in the Declaration are not commensurate in scope with the claim language.

---

[3] Rule 132 Declaration filed May 8, 2006, and also attached as Evidence Appendix (ix).

Appellants' contention that Danielsson does not allow a choice of material for the converter because Danielsson is always limited to the electrode used simultaneously as the converter (App. Br. 6) is without merit. Appellants have not identified any evidence to support this statement. Additionally, Danielsson does allow optimizing the detector for other types of particles such as neutrons, protons, etc. (col. 13, ll. 9-11; Ans. 8). Thus, Danielsson is not always limited to an electrode.

Appellants' contention that Danielsson's Figure 3 cannot be modified to include an additional converter layer on the GEM foil (App. Br. 8) is not commensurate in scope with the claims. Nowhere in the independent or dependent claims is an "additional converter layer" recited. Further, Figure 2a of Danielsson shows the insulating layer as taught by Appellant and the two conductive layers formed thereon as claimed. Figure 7a shows that a composite amplifier/converter structure has a top metal layer formed thereon (FF 4). There is, however, nothing in Danielsson stating this metal layer must be made of the same material as the conductive layer. There is also nothing in Danielsson that would dissuade one of skill in the art from making this layer of boron-10 as taught by Gleason (FF 5). Appellants' remaining arguments (App. Br. 8-9) are also not commensurate in scope with Appellants claims.

Appellants have provided no persuasive evidence to support the argument that it would not be obvious to combine Danielsson and Gleason. Appellants have merely argued features that are not present in the independent claims. Thus, claim 1, and claims 2, 5, 6, 8-10, 13-15, 17, and 18, is obvious over Danielsson and Gleason.

Claim 3

The Examiner rejected claim 3 over Danielsson, Gleason, and Sauli. Sauli was merely cited as teaching that it was known in the art at the time of Appellants' invention to provide passages having minimum diameters and spacings (FF 7) as Danielsson does not explicitly disclose the minimum diameter and spacing of the passages aligned with the holes in the GEM structure (Ans. 7).

Appellants have provided arguments with respect to photocathodes, such arguments again, not being commensurate in scope with the claim language. Thus, since claim 3 depends from claim 1, for the reasons set forth above, claim 3 is obvious over the collective teachings of Danielsson, Gleason, and Sauli.

CONCLUSION

Appellants have not established that the Examiner erred in rejecting claims 1, 2, 3, 5, 6, 8-10, 13-15, 17, and 18 under 35 U.S.C. § 103.

DECISION

The Examiner's decision rejecting claims 1, 2, 3, 5, 6, 8-10, 13-15, 17, and 18 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

:

gvw

CASELLA & HESPOS
274 MADISON AVENUE
NEW YORK, NY 10016